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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,180	11/26/2003	Jong Chul Bang	K-0585	6620
34610 7590 01/17/2008 KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200			EXAMINER PERRIN, JOSEPH L	
			ART UNIT 1792	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/721,180	<b>Applicant(s)</b> BANG, JONG CHUL	
	<b>Examiner</b> Joseph L. Perrin, Ph.D.	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 21-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 November 2007 has been entered.

### ***Response to Arguments***

1. In view of applicant's amendment, the §112 rejections have been rendered moot.
2. Applicant's arguments filed 28 November 2007 have been fully considered but they are not persuasive.
3. Regarding the §102 rejection over ABE, applicant points to the newly added language and argues that ABE does not disclose the claimed brake resistance assembly because ABE is directed to an electromagnetic brake which prevents the motor from turning when power is cut off whereas the instant invention is directed to the motor to continue rotation due to inertia. However, such allegation is not supported by any evidence or showing in ABE to support applicant's conclusions and therefore are not persuasive. Even if, *arguendo*, one were to limit the disclosure of ABE as not readable on a free spinning motor, the claimed language is directed to the brake

resistance assembly and not the motor or combination of brake resistance assembly and motor. Thus, the intended use of the brake resistance assembly (i.e. use with a particular unclaimed motor) fails to structurally distinguish over ABE since each and every structural limitation claimed is anticipated by ABE and the brake resistance assembly of ABE has a structural configuration which is fully capable of performing the claimed intended use operation since it comprises the structural limitations of the claimed brake resistance assembly. Manifestly, if the claimed structural limitations are anticipated then the capability to perform the intended use necessarily must be present in the anticipating reference. It is of no moment whether the motor of ABE freely rotates or stops after the motor is turned off, only that the brake resistance assembly is capable of converting electric energy into thermal energy as described in the intended use of the claims regarding the claimed configuration of the brake resistance assembly. The Examiner finds no structural difference in the claimed brake resistance assembly and that disclosed in ABE, and thus, the brake resistance assembly of ABE is fully capable of converting electric energy into thermal energy within the scope of the claimed invention. Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original) Absent clarification of how the claimed brake resistance assembly structurally differentiates from that of ABE, recitation of ABE reads on the claimed invention. However, to address applicant's concerns the

Examiner has cited DARBY *et al.* which teaches that it is known to provide a washing machine with a resistor which converts electrical energy into thermal energy of a rotating drive motor.

Regarding the "configured" language, applicant appears to argue that the "configured" language as claimed is sufficient to distinguish the claimed invention over the structure ABE by simply pointing to MPEP 2173.05(g) and arguing that functional language is acceptable. However, it appears applicant has misconstrued the Examiner's position. The Examiner never questioned whether or not functional language is proper. Rather, the Examiner has questioned how the broad use of "configured" provides any structural distinction between the claimed invention and that of ABE when each structural limitation claimed is taught by ABE. Thus, ABE has a configuration with each structural limitation as claimed and necessarily must be capable of performing the intended use recitation. Argument to the contrary would suggest that a brake resistance assembly having the claimed limitations (and those of ABE) would be incapable of performing such intended use and would be inoperative. Obviously, this is not the case. It appears that applicant is attempting to require the intended use of a free spinning motor in combination with the brake resistance assembly in an attempt to suggest that ABE is not capable of performing such function because ABE uses a different type of motor. However, this is not consistent with the claimed invention nor is it consistent with the disclosure of ABE (see above regarding applicant's unsupported allegations regarding the capability of the motor of ABE to rotate when the motor is turned off). The claimed invention is directed to the brake resistance assembly with the

intended use of being operated with a motor which continues rotation after the motor is turned off. This is significantly different than applicant's arguments which are directed to the combination of a brake resistance assembly and a motor which continues rotation after the motor is turned off. There is nothing in the teachings of ABE that would reasonably convey to one having ordinary skill in the art that the brake resistance assembly of ABE was incapable of being used with a motor which continues rotation after the motor is turned off, and absent evidence or adequate showing of how the brake assembly structure of ABE is not capable of performing the claimed intended use (i.e. differentiating the assemblies by structural limitations), recitation of the assembly in ABE reads on the claimed assembly. Simply stating that the brake assembly structures are "configured" differently without pointing out how the structure as claimed differentiates (or that the brake assembly structures are used with different motors) is not a showing that the structure is incapable of performing the intended use. So long as each and every structural limitation of the brake resistance assembly as claimed is taught by ABE, the brake resistance assembly of ABE is considered to be fully capable of performing the same intended uses as those of the claimed brake resistance assembly. Thus, ABE is construed to read on applicant's claimed brake assembly structure.

While a certified translation of ABE was not readily available at the time of this Office action, the Examiner herein submits a electronic translation of ABE to further support the position of the Office.

4. Regarding the §103 rejections, applicant's arguments in view of the instant amendment are persuasive and the rejections are withdrawn. However, new rejections have been made and detailed below.

5. The Examiner again notes that applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Since all of the claimed limitations are taught or reasonably suggested by the cited prior art and applicant's arguments do not specifically point out how the language of the claims patentably distinguishes them from the references (i.e. only amount to general allegations of patentability), the record is unclear as to how the invention as claimed patentably distinguishes from the prior art of record.

#### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 25-26 & 46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the claims, the relative terminology of a coil being "thin enough" to melt based on a voltages renders the claim indefinite because a variable object (i.e. a coil being "thin enough") in reference to another variable (i.e. a voltage) renders the claim indefinite since the relationship of the variables are not based

on any known standards and, thus, metes and bounds of the claim cannot be determined. See *Ex parte Brummer*, 12 USPQ2d 1653 (Bd. Pat. App. & Inter. 1989).

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 37-41 & 43-46 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-125600 to ABE. Re claims 37-41 & 43, ABE discloses an assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second terminals in the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances and the coil ends connected to either separate terminals or a common terminal which are coupled to the motor (it is common knowledge that conventional motors such as that used in ABE comprise windings) (see abstract and Figures 1, 2, 3 & 5). Re claims 44-45, these claims are directed to the coils having the capability to convert voltage into thermal energy so as to decrease voltage which is simply a property of a conventional resistance coil such as that recited in ABE. Re claim 46, given the immense scope of the claim (see variable relative to another variable in the §112 rejection above) such language reads on any coil, and the position is taken that any coil has a predetermined melting point and predetermined thickness to



be "thin enough" to melt and is capable of melting with a certain voltage. Simply put, any conventional coil is "thin enough" to melt at some voltage.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of U.S. Patent No. 6,748,618 to DARBY *et al.* ("DARBY") and ABE. In Figure 6, ERDMAN teaches a washing machine having a cabinet, drum, motor, and brake resistance assembly including, *inter alia*, an energy dissipation circuit (228) connected to an external circuit including winding coils of the motor and to terminals (see also Figure 25). ERDMAN also teaches the known concept of dissipating energy from inertia driven rotors when the motor is switched off using, *inter alia*, plural resistors (see col. 42, line 60 - col. 43, line 15).

While ERDMAN discloses a brake resistance assembly for controlling braking of a rotary motor as a counter electromotive brake, ERDMAN does not expressly disclose precisely how the energy is converted and dissipated or such assembly in a case with first and second coils of differing resistance and connected to first and second terminals. Re claims 21 & 27-30, DARBY teaches that it is known that using resistors to dissipate energy from a winding motor is performed by converting spinning energy into electrical energy, and then to heat energy which is dissipated by the resistor. ABE discloses a braking assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second terminals in the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances and the coil ends connected to either separate terminals or a common terminal (see abstract and Figures 1, 2, 3 & 5). Re claims 22-24, these claims are directed to the coils having the capability to convert voltage into thermal energy so as to decrease voltage which is simply a property of a conventional resistance coil such as that recited in ABE. Re claims 25-26, given the immense scope of the claim (see variable relative to another variable in the §112 rejection above) such language reads on any coil, and the position is taken that any coil has a predetermined melting point and predetermined thickness to be "thin enough" to melt and is capable of melting with a certain voltage. Simply put, any conventional coil is "thin enough" to melt at some voltage.

ABE teaches that it is known to provide a braking assembly for a rotary motor in an assembly comprising a case (electromagnet (16) readable on broad recitation of

"case"), first and second connect terminals fixed to the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances in order to more effectively control a motor braking action (see abstract and Figures 1,2,3 & 5). Re claims 25-26, such language is directed to intended use and not afforded patentable weight, and the position is taken that any coil has a predetermined melting point and predetermined thickness to be "thin enough" to melt and is capable of melting with a certain voltage. Simply put, any coil is "thin enough" to melt at some voltage.

Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to substitute the washing machine braking assembly of ERDMAN with the braking assembly of ABE in order to provide the predictable results of a rotary motor with an effective braking function in a rotary motor. Moreover, there would be a reasonable expectation of success in substituting one braking assembly for another in order to arrive at applicant's claimed invention since such substitution of known equivalents would have yielded the same predictable results.

12. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of DARBY and ABE, and further in view of FEHR. Recitation of ERDMAN, DARBY & ABE are repeated here from above. While ABE expressly teaches coils having different resistivity and expressly teaches the coils having different diameters, ABE does not expressly disclose the coil material. FEHR teaches that it is

known to use aluminum or copper in coil material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum or copper in the coils to achieve different resistances due to their well known and naturally occurring different resistances since applicant has not disclosed that using copper or aluminum solves any stated problem or is for any particular purpose other than achieving different resistance from their inherent and natural properties and it appears that the invention would perform equally well with other means for achieving different resistance between two coils and the selection of any of these known equivalents (i.e. different coil diameter or different coil material) to provide different resistance between coils would be within the level of ordinary skill in the art.

13. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of DARBY and ABE, and further in view of U.S. Patent No. 4,085,395 to BILLERBECK et al. ("BILLERBECK"). Recitation of ERDMAN, DARBY and ABE are repeated here from above. While ABE discloses the claimed braking assembly as claimed including a casing, ABE does not disclose the casing having contours for dissipating heat. BILLERBECK teaches that it is known to provide a coil casing with contoured U-shaped channels for dissipating coil heat (see entire document, for instance, the abstract, Figures and relative associated text).

All of the component parts are known in ERDMAN, DARBY, ABE and BILLERBECK. The only difference is the combination of "old elements" into a single device (particularly, the casing of ABE and BILLERBECK).

Thus, it would have been obvious to one having ordinary skill in the art to provide the coil case of ABE with heat dissipating channels of the coil case of BILLERBECK, since the operation of the heat dissipating channels is in no way dependent on the operation of the braking assembly, and heat dissipating channels could be used in combination with an electromagnetic coil casing to achieve the predictable results of dissipating heat from coils inside a casing.

14. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of DARBY and ABE, and further in view of SHINOHARA. Recitation of ERDMAN, DARBY & ABE is repeated here from above. While the combination at least teaches or suggest coils in an electromagnetic motor braking assembly, none of the references appear to disclose using a molding material having good heat conductivity. SHINOHARA teaches that it is known that molded resins have excellent heat resistance and electrical insulation properties (see col. 19, lines 13-21) and to provide molded resins in molded articles such as "electromagnetic coil bobbin cases" (see col. 21, lines 19-37).

Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to supply the brake assembly of ERDMAN, DARBY & ABE with molded insulation resins as described in SHINOHARA to provide heat resistivity/insulation in order to avoid heat damage, i.e. fires. Regarding the configuration of the partitions, coils and terminals, it would have been obvious to one having ordinary skill in the art at the time the invention was made

to rearrange the internal components to achieve the same predictable result (patentability of the configuration is not clearly pointed out, see above regarding 37 CFR 1.111(b)), since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

15. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of FEHR. Recitation of ABE is repeated here from above. While ABE expressly teaches coils having different resistivity and expressly teaches the coils having different diameters, ABE does not expressly disclose the coil material. FEHR teaches that it is known to use aluminum or copper in coil material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum or copper in the coils to achieve different resistances due to their well known and naturally occurring different resistances since applicant has not disclosed that using copper or aluminum solves any stated problem or is for any particular purpose other than achieving different resistance from their inherent and natural properties and it appears that the invention would perform equally well with other means for achieving different resistance between two coils and the selection of any of these known equivalents (i.e. different coil diameter or different coil material) to provide different resistance between coils would be within the level and knowledge of ordinary skill in the art.

16. Claims 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of SHINOHARA. Recitation of ABE is repeated here from above. While

ABE discloses the claimed electromagnetic motor braking assembly as claimed, ABE does not appear to disclose using a molding material having good heat conductivity.

SHINOHARA teaches that it is known that molded resins have excellent heat resistance and electrical insulation properties (see col. 19, lines 13-21) and to provide molded resins in molded articles such as "electromagnetic coil bobbin cases" (see col. 21, lines 19-37). Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to supply the brake assembly of ABE with molded insulation resins as described in SHINOHARA to provide heat resistivity/insulation in order to avoid heat damage, i.e. fires. Regarding the configuration of the partitions, coils and terminals, it would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the internal components to achieve the same predictable result (patentability of the configuration is not clearly pointed out, see above regarding 37 CFR 1.111(b)), since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. Re claim 51, the terminals are clearly mounted on a "partition" structure. Even if, *arguendo*, one were construe the electromagnet structure as not readable on a "case", the position is taken that providing a fully surrounding case structure would be well within the level and skill generally available to one having ordinary skill in the art and the use of said common knowledge case structure would yield the predictable results of housing the coils

17. Claims 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of SHINOHARA, and further in view of BILLERBECK. Recitation of ABE and SHINOHARA are repeated here from above. While ABE discloses the claimed braking assembly as claimed including a casing, ABE does not disclose the casing having contours for dissipating heat. BILLERBECK teaches that it is known to provide a coil casing with contoured U-shaped channels for dissipating coil heat (see entire document, for instance, the abstract, Figures and relative associated text).

All of the component parts are known in ABE and BILLERBECK. The only difference is the combination of "old elements" into a single device.

Thus, it would have been obvious to one having ordinary skill in the art to provide the coil case of ABE with heat dissipating channels of the coil case of BILLERBECK, since the operation of the heat dissipating channels is in no way dependent on the operation of the braking assembly, and heat dissipating channels could be used in combination with an electromagnetic coil casing to achieve the predictable results of dissipating heat from coils inside a casing.

### ***Conclusion***

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (571)272-1305. The examiner can normally be reached on M-F 8:00-4:30.



19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph L. Perrin/  
Joseph L. Perrin, Ph.D.  
Primary Examiner  
Art Unit 1792

JLP